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Shirley et al.  
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### REMARKS

Reconsideration of the above-referenced application is respectively requested in view of these remarks. Claims 1-16 are currently pending.

### REAL PARTY IN INTEREST

The present application is wholly assigned to Motorola, Inc., a Delaware corporation with its headquarters in Schaumburg, Illinois.

### STATUS OF THE CLAIMS

Applicant originally filed claims of the present application on January 19, 2002. In the Office Action dated December 22, 2004, claims 1, 2, 6, 7, 10-13, and 15-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 5,410,703 to Nilsson et al. in view of Applicants' admitted prior art as specified in the Application, claims 3, 4, 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of the prior art cited in the Application and further in view of United States Patent No. 6,186,734 to Saboff et al. and claims 5, 14, and 19-21 under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of the admitted prior art and further in view of Saboff and further in view of obviousness. Applicants responded in a communication mailed May 23, 2005 by amending claims 1, 2, 6, 10, 16 and 18. In the Office Action dated August 9, 2005, claims 1, 2, 6, 7, 10-13, and 15-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 5,410,703 to Nilsson et al. in view of Applicants admitted prior art as specified in the Application, claims 3, 4, 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of the prior art cited in the Application and further in view of United States Patent No. 6,186,734 to Saboff et al. and claims 5, 14, and 19-21 under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of the admitted prior art and further in view of Saboff and further in view of obviousness. This rejection was made final. Applicant's response to the August 9, 2005 Final Office Action is hereby submitted.

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## **STATUS OF THE AMENDMENTS**

Pursuant to Applicant's amendments made on May 23, 2005, claims 1-21 are currently pending. No amendments are made in this Response.

## **SUMMARY OF THE INVENTION**

The present invention is related to an apparatus and method of effectively updated software from a first version to a second version for logically de-centralized functions. For the present invention, a plurality of devices is provided where each device includes a processor and a memory. In order to operate in a de-centralized manner, the devices are connected by a known method, including an intranet, so that a device can access functions that are contained within any of the plurality of devices. The present invention includes a first set of instructions that cause the processor to perform one of the de-centralized processing functions and a second set of instructions that cause the processor to request the performance of a selected one of the first set of instructions. The present invention, as claimed, also includes a third set of instructions that cause the processor to bind the second set of instructions to the first set of instructions. When the processor needs to perform a function, the third set of instructions notifies the second set of instructions which of the first set of instructions, which may be on any of the devices, to use to operate.

During the software conversion process, the devices need to operate on the proper version of software. For operations not to be disrupted, all the devices are not converted from one software version to another software version at the same time. But because the versions are not changed on all the devices at the same time, there are times when the software version on one device is different from the software version on a different device. As the software versions are changed on the devices, different subsets of devices within the communications network are created and a device in one subset may not be able to use the first set of instructions on device that is not in that subset.

The third set of instructions knows which version of software is operating on each device to which it has access. Thus, the third set of instructions cause the processors within the first subset of the devices to have the second set of instructions connect to the first set of instructions in the first subset of devices. Moreover, the third set of

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instructions cause the processors not within the first subset of devices to have the second set of instructions connect to the first set of instructions not in the first subset of devices. In the words of the Specification, the subsets of devices are the domains in which the decentralized functions are configured. For the present invention to operate, the third set of instructions knows what version of software is running on each device. In order for that to occur, the third set of instructions across the plurality of devices needs to be updated along with software versions during software installations.

While software is being updated on one or more of the devices, the update affects more than just the device upon which it is updated. In the de-centralized environment of the present invention, software that resides on one device may be accessed by another device. If the software in one device is updated, that software may not be compatible with the software on another device. Thus, all the devices need to know what software is on each device so that a request from one device does not acquire software that resides on another device that is not compatible with requesting device. In order to achieve this result, when any software installation is made the third set of instructions for each of the devices also is updated even though the software on the device is not being replaced. Accordingly, each device is made aware of what software is available for it on another device. Independent claims 1, 5, 10 and 16 have been amended to reflect the need for the third set of instructions to be update upon each change of software version.

#### **GROUND OF THE REJCTIONS TO BE REVIEWED**

Claims 1, 2, 6, 7, 10-13, and 15-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over United States Patent No. 5,410,703 to Nilsson et al. in view of Applicants' admitted prior art as specified in the Application. Claims 3, 4, 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of the prior art cited in the Application and further in view of United States Patent No. 6,186,734 to Saboff et al. Claims 5, 14, and 19-21 under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of the admitted prior art and further in view of Saboff and further in view of obviousness.

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## ARGUMENTS

In the Final Office Action, independent claims 1, 6, 10 and 16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of Applicants' admitted prior art. In particular, the Final Office Action posits that Nilsson discloses "wherein during software replacement the third set of instructions in each of the plurality of devices in the first subset and the second subset is updated such that each of the plurality of devices knows which version of software from the first version and the second version is operating on all the plurality of devices." The Final Office Action focuses on Figure 5 and Column 13, lines 45-56 of Nilsson to support this position. Applicant respectfully traverses this rejection.

In the Amendment filed November 15, 2004, Applicants stated that Nilsson does not discuss the issues present in a de-centralized environment that is being addressed by the present invention. Moreover, Nilsson does not discuss the issues that are addressed by the present invention that occur as software is updated across a plurality of devices where one device may need to acquire and use software that resides on a different device.

In the Office Action, Nilsson is cited for disclosing, the memory the processor and the first, second and third set of instructions where the third set of instructions is used to connect the second set of instructions to the first set of instructions. Nilsson is also cited for the principle that during software replacement the first and second set of instructions are formed into subsets that are using the same version of software such that the third set of instructions causes the first subset of devices to use the first and second set of instructions of the first software version and the set of devices not in the first subset to use the first and second set of instructions of the second software version. It is respectfully submitted that neither Nilsson nor the admitted prior art discuss how the third set of instructions is updated across all devices in both subsets with the versions of software with each software replacement. Nilsson and the admitted prior art also do not disclose that each version of the third set of instructions that is used by each device in the de-centralized arrangement is to be updated.

The purpose of the invention disclosed by Nilsson is to provide a method and apparatus to convert software from test software to final operating software when test software is tested in a live environment. In such an environment, there two software

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versions are operating simultaneously on the same devices. Test traffic is operating to the testing software and normal traffic is operating on the final and proven software. Once the test software, or a portion thereof, has completed testing it becomes the software used by the normal traffic and the old software is transitioned out. Because Nilsson is concerned with the transfer from test software to running software fully running on the system, it looks primarily to distinctions between the traffic to determine which version of software to use. The transition from test software to normal software is handled once the test software is proven.

While Nilsson is directed to issues related to conversions of software, there the similarities between it as well as the art cited in the Office Action and the present invention end. Nilsson does not discuss the issues present in a de-centralized environment that is being addressed by the present invention. Moreover, Nilsson does not discuss the issues that are addressed by the present invention that occur as software is updated across a plurality of devices where one device may need to acquire and use software that resides on a different device. In order to overcome the issues in the prior art, the present invention creates subsets of devices wherein each subset of devices is running the same version of software. In addition, the present invention includes updated the third set of instructions or the instructions that connect the device to the appropriate software across the plurality of devices and in both subsets so that each device knows the subset of devices that has the version of software that is accessible by that device. That version of software may be available on the specific device or on another device within the subset. In order for continued proper operation, the third set of instruction is updated in every device each time the software is updated on any device.

The present invention is patentable over the cited art because Nilsson does not address the issues presented by updating software over a plurality of devices in a de-centralized environment. As Nilsson is directed to the testing of software and the transfer from old software to the new tested software, it is focuses its attention on the issues related to the operation of a single device. Of course, it is possible to apply the techniques disclosed by Nilsson in a de-centralized environment, but that provides for the use of two software versions on the same device within the de-centralized environment. The issues addressed in the present invention are directed to the need to use software on a

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different device and how to operate with different software versions on different devices. Applying what is disclosed by Nilsson in a de-centralized environment still does not address the issues present because the issue would still remain as to whether the software versions are compatible within different subsets of devices. Thus, Nilsson does not illustrate how one device may need to use the software that is contained on another device within the de-centralized environment.

In the present invention, subgroups of devices are created across the de-centralized environment where each of the subgroups is running the compatible software or the same version of software. There are differences between the subsets such that the software in a first subset may not operate with the software in the second subset. Nilsson does not teach, disclose or suggest the creation of these claims subsets of devices from among the plurality of devices. The Office Action states that Figure 5 and Column 3, lines 50-60 suggest the two different subsets. Figure 5 and the cited text, however, do not discuss the creation of subsets of different devices. Figure 5 and its corresponding text only disclose a pointer to a test software and old software to use the appropriate software if it is a test call or a normal call, respectively. To the extent that Figure 5 suggests subgroups, it only discloses subsets of software within a device that is running test software and normal software, not subsets of devices running the same software version.

The cited text also does not disclose the claimed subsets. Consistent with Figure 5, the cited text discloses old and new software but not subsets from a plurality of devices where the subsets run different software versions. As Nilsson discloses the use and transition of old and new software on one device, Nilsson can only suggest that in a plurality of devices each device would have a subset of old and new software instead of the claimed subset of devices running one version of software and another subset of devices running a second version of software. As Nilsson focuses on the updating of software on one device, which can be applied across a number of different devices in a centralized or de-centralized environment, Figure 5 and the cited text do not teach or suggest taking a plurality of devices and creating subsets out of them depending on the version of software that is run on them. The creation of subsets according to the present invention is part of what is necessary because of operating in a de-centralized

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environment when a device needs to access software on one of another of the plurality of devices during a software upgrade.

As mentioned above and in the specification, the claimed invention requires that that during software replacement the third set of instructions in each of the plurality of devices in the first and the second subsets is updated. As an example of the claimed invention, the first subset of devices receives an updated version of the first and second set of instructions while the second subset of devices still uses the version of first and second set of instruction previously installed. For the third set of instructions, however, the plurality of the devices in both the first and second subsets are updated. Thus, one of the set of instructions in the second subset is updated with new information while the version of the software operating in that subset does not change. The reason for updating a set of instruction on the devices that are not receiving updated software is that in the decentralized environment the software on one device may need access to software on another device that may not be compatible. Updating the third set of instructions notifies the devices on the second subset which devices it may access because the software on another device may have changed.

Nilsson does not address how a device that has not received a new version of software can work with a device that has received a new version of software. In addition, Nilsson does not address how a device that has received a new version of software can work with a device that has not received a new version of software. The Office Action cites Figure 5 and Column 13, lines 45-56. Figure 5 is discussed above, and in the context here it does not provide disclose that the third set of instructions is updated on all devices when the software is updated in only one subset. Figure 5 and Nilsson in general are not framed in terms of the first and second subset of the present invention. Thus, Figure 5 does not make any distinction between different devices.

Column 13, lines 45-56 also does not disclose the aspect of the present invention where the third set of instructions are updated on all devices even though the first and second set of instructions are not updated in a certain subset of devices. The cited section uses the word "trading," but it does not define what is meant by that term. The normal definition of trading does not suggest the claimed invention. Rather, it can suggest the trading of test and new software both running on a device depending on the traffic using

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the device. Moreover, the cited section includes the language that "the binding between software versions is made in runtime . . . ." The present invention is not concerned with binding of different software versions. Rather, it is directed to obtaining compatible versions of software and knowing on which devices within the subsets compatible versions of software are located after a software replacement.

The feature of the claimed invention are not taught, disclosed or otherwise suggested by Nilsson. In particular, Nilsson and the admitted prior art do not focus on software upgrades and downgrades in a decentralized environment by creating subset of devices and then updated software in a one subset and updating instructions on all devices regardless of the subset so that each subset of devices knows how the changes in its and other subsets affect it. In view of the foregoing it is respectfully submitted that independent claims 1, 6, 10, and 16 are not obvious over Nilsson in view of the admitted prior art. As claims 2, 7, 12-13, 15 and 17-18 depend upon independent claims 1, 6, 10 and 16 and include all the limitation so the independent claims, it is respectfully submitted that they are also not obvious over Nilsson in view of the admitted prior art. Applicants therefore respectfully request that the rejection under Section 103(a) be withdrawn.

In the Office Action, claims 3, 4, 8 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of the prior art cited in the Application and further in view of United States Patent No. 6,186,734 to Saboff et al. As stated above, Applicants have amended independent claims 1 and 6 upon which claims 3 and 4 and 8 and 9 depend, respectfully to overcome the rejection based on Nilsson and the cited prior art. Applicants have also amended claim 3 to be consistent with claim 1 and to include the third version of software that is a limitation of claim 3.

The Office Action cites Saboff for disclosing a third software version for claim 3 and a registry database for managing more than one version of the software on the same system as in claims 4, 8 and 9. The present invention is directed to updating software versions with de-centralized functions. To overcome the issues presented by the prior art, the present invention updates the third set of instructions or other means such that each device in both the first and second subsets and within the de-centralized environment knows the software versions of all the other devices in both subsets so that it can use the



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software that has the proper version for that device. Assuming the Saboff does disclose the items cited in the Office Action, Saboff, like Nilsson, does not teach, disclose or suggest updating the third set of instructions for all the devices regardless if the software version of the first and second version set of instructions were replaced for that device. Accordingly, it is respectfully submitted that claims 3, 4, 8 and 9 are not obvious over Nilsson in view of the admitted prior art and further in view of Saboff. Applicants therefore respectfully request that this rejection under Section 103(a) be withdrawn.

The Office Action also rejects claims 5, 14, and 19-21 under 35 U.S.C. § 103(a) as being unpatentable over Nilsson in view of the admitted prior art and further in view of Saboff and further in view of obviousness. In particular, the Office Action cites Saboff for the concept of the registry in claims 5 and the "name service" of claims 20 and 21. With respect to claim 19, the Office Action combines the rejection to claims 4, 8 and 16. As stated above, Saboff does not teach, disclose or suggest updating the third set of instructions for all devices regardless if the device has had a software replacement. Moreover, there is nothing "obvious" about the invention as claimed. Accordingly, it is respectfully submitted that claims 5, 14, and 19-21 are not obvious over Nilsson in view of the admitted prior art and further in view of Saboff. Applicants' therefore respectfully request that this rejection under Section 103(a) be withdrawn.

As the Applicants have overcome all substantive rejections and objections given by the Examiner and have complied with all requests properly presented by the Examiner, the Applicants contend that this Amendment, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the Applicants respectfully solicit allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter.

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Please charge any fees associated herewith, including extension of time fees, to  
**50-2117.**

Respectfully submitted,  
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